

## CLAIMS

What is claimed is:

- 1 1. A method for prioritizing virus scan requests comprising:
  - 2 checking a virus scan request to determine if scanning an object of the request is
  - 3 necessary; and
  - 4 placing the virus scan request on a queue in a priority order based on a characteristic of
  - 5 the virus scan request.
  
- 1 2. The method of claim 1, further comprising:
  - 2 selecting a one of the virus scan requests from the queue.
  
- 1 3. The method of claim 2, wherein selecting is based on the priority order.
  
- 1 4. The method of claim 2, wherein selecting is based on the characteristic of the virus scan  
2 request.
  
- 1 5. The method of claim 2, further comprising:
  - 2 scanning the object of the selected virus scan request.
  
- 1 6. The method of claim 2, wherein the characteristic includes at least one of an identity of  
2 the user triggering the virus scan request, a type of the process accessing the object of the virus  
3 scan request, a file extension of the object of the virus scan request, a time stamp of when the

4 virus scan request was received, and an indication of whether the object is being accessed from a  
5 server console or from a network client.

1 7. The method of claim 1, wherein the priority order is further based on comparing the  
2 characteristic of the virus scan request with the characteristics of the virus scan requests  
3 previously placed on the queue.

1 8. The method of claim 7, wherein the priority order is further based on a parameter  
2 indicating which of the compared characteristics is given higher priority.

1 9. The method of claim 4, wherein selecting is further based on comparing the  
2 characteristics of the virus scan requests placed in the queue.

1 10. The method of claim 9, wherein selecting is further based on comparing the  
2 characteristics of the virus scan requests placed in the queue with the characteristics of the  
3 previously selected virus scan requests whose objects are currently being scanned.

1 11. The method of claim 10, wherein selecting is further based on a parameter indicating  
2 which of the compared characteristics is given higher priority.

1 12. The method of claim 6, wherein the user identity of the selected scan request is an  
2 administrator as compared to a regular user.

1       13. The method of claim 6, wherein the process type of the selected scan request is an  
2       operating system as compared to a user application.

1       14. The method of claim 6, wherein the file extension of the selected scan request is an  
2       executable file as compared to a data file.

1       15. The method of claim 6, wherein the time stamp of the selected virus scan request is  
2       earlier as compared to the time stamps of each of the checked virus scan requests previously  
3       placed on the queue.

1       16. The method of claim 6, wherein the indication of the selected virus scan request is that  
the object of the request is being accessed from a server console as compared to a network client.

1       17. The method of claim 1, wherein scanning is necessary when a virus scan status indicates  
the object is not known to be virus free.

1       18. The method of claim 1, wherein scanning is necessary when the object of the virus scan  
2       request is in a directory not excluded from virus scanning.

1       19. An apparatus comprising:  
2            a machine-accessible medium having stored thereon executable instructions to cause a  
3            computer to perform  
4            checking a virus scan request to determine if scanning is necessary; and

5 placing the virus scan request on a queue in a priority order based on a characteristic of  
6 the virus scan request.

1 20. The apparatus of claim 19, further comprising instructions for selecting a one of the virus  
2 scan requests from the queue.

1 21. The apparatus of claim 20, wherein the instructions for selecting is based on the priority  
2 order.

1 22. The apparatus of claim 20, wherein the instructions for selecting is based on the  
characteristic of the virus scan request.

23. The apparatus of claim 20, further comprising instructions for scanning the object of the  
selected virus scan request.

24. The apparatus of claim 20, wherein the characteristic includes at least one of an identity  
of the user triggering the virus scan request, a type of the process accessing the object of the  
3 virus scan request, a file extension of the object of the virus scan request, a time stamp of when  
4 the virus scan request was received, and an indication of whether the object is being accessed  
5 from a server console or from a network client.

1        25. The apparatus of claim 20, wherein the instructions for placing the virus scan request on  
2        the queue in the priority order are further based on comparing the characteristic of the virus scan  
3        request with the characteristics of the virus scan requests previously placed on the queue.

1        26. The apparatus of claim 25, wherein the instructions for placing the virus scan request on  
2        the queue in the priority order are further based on a parameter indicating which of the compared  
3        characteristics is given higher priority.

1        27. The apparatus of claim 20, wherein the instructions for selecting are further based on  
2        comparing the characteristics of the virus scan requests placed in the queue.

1        28. The apparatus of claim 27, wherein the instructions for selecting are further based on  
2        comparing the characteristics of the virus scan requests placed in the queue with the  
3        characteristics of the previously selected virus scan requests whose objects are currently being  
4        scanned.

1        29. The apparatus of claim 27, wherein the instructions for selecting are further based on a  
2        parameter indicating which of the compared characteristics is given higher priority.

1        30. The apparatus of claim 24, wherein the instructions for selecting cause the apparatus to  
2        select the virus scan request having a user identity of an administrator as compared to a regular  
3        user.

1       31. The apparatus of claim 24, wherein the instructions for selecting cause the apparatus to  
2       select the virus scan request having a process type of an operating system as compared to a user  
3       application.

1       32. The apparatus of claim 24, wherein the instructions for selecting cause the apparatus to  
2       select the virus scan request having a file extension of an executable file as compared to a data  
3       file.

1       33. The apparatus of claim 24, wherein the instructions for selecting cause the apparatus to  
2       select the virus scan request having an earlier time stamp as compared to the time stamps of each  
3       of the checked virus scan requests previously placed on the queue.

1       34. The apparatus of claim 24, wherein the instructions for selecting cause the apparatus to  
2       select the virus scan request having an indication that the object of the request is being accessed  
3       from a server console as compared to a network client.

1       35. The apparatus of claim 19, wherein the instructions for checking to determine if scanning  
2       is necessary include determining when a virus scan status indicates the object is not known to be  
3       virus free.

1       36. The apparatus of claim 19, wherein the instructions for checking to determine if scanning  
2       is necessary include determining when the object of the virus scan request is in a directory not  
3       excluded from virus scanning.

1       37. A virus scanner comprising:  
2            a pre-processor thread that checks a virus scan request to determine if scanning an object  
3        of the request is necessary;  
4            a queue that receives the virus scan request in a priority order based on a characteristic of  
5        the virus scan request.

38. The virus scanner of claim 37, further comprising:

      a scanner thread that selects a one of the virus scan requests from the queue.

39. The virus scanner of claim 38, wherein the selection is based on the priority order.

40. The virus scanner of claim 38, wherein the selection is based on the characteristic of the  
      virus scan request.

1       41. The virus scanner of claim 38, wherein the scanner thread further scans the object of the  
2       selected virus scan request.

1       42. The virus scanner of claim 38, wherein the characteristic includes at least one of an  
2       identity of the user triggering the virus scan request, a type of the process accessing the object of  
3       the virus scan request, a file extension of the object of the virus scan request, a time stamp of  
4       when the virus scan request was received, and an indication of whether the object is being  
5       accessed from a server console or from a network client.

1       43. The virus scanner of claim 37, wherein the priority order is further based on comparing  
2       the characteristic of the virus scan request with the characteristics of the virus scan requests  
3       previously placed on the queue.

1       44. The virus scanner of claim 43, wherein the priority order is further based on a parameter  
2       indicating which of the compared characteristics is given higher priority.

1       45. The virus scanner of claim 40, wherein the selection is further based on comparing the  
2       characteristics of the virus scan requests placed in the queue.

1       46. The virus scanner of claim 45, wherein the selection is further based on comparing the  
2       characteristics of the virus scan requests placed in the queue with the characteristics of the  
3       previously selected virus scan requests whose objects are currently being scanned.

1       47. The virus scanner of claim 46, wherein the selection is further based on a parameter  
2       indicating which of the compared characteristics is given higher priority.

1       48. The virus scanner of claim 42, wherein the user identity of the selected scan request is an  
2       administrator as compared to a regular user.

1       49. The virus scanner of claim 42, wherein the process type of the selected scan request is an  
2       operating system as compared to a user application.

1       50. The virus scanner of claim 42, wherein the file extension of the selected scan request is  
2       an executable file as compared to a data file.

1       51. The virus scanner of claim 42, wherein the time stamp of the selected scan request is  
2       earlier as compared to the time stamps of each of the checked virus scan requests previously  
3       placed on the queue.

1       52. The virus scanner of claim 42, wherein the indication of the selected virus scan request is  
2       that the object of the request is being accessed from a server console as compared to a network  
3       client.

1       53. The virus scanner of claim 37, wherein determining that scanning is necessary includes  
2       determining when a virus scan status indicates the object is not known to be virus free.

1       54. The virus scanner of claim 37, wherein determining that scanning is necessary includes  
2       determining when the object of the virus scan request is in a directory not excluded from virus  
3       scanning.

1       55. A computer system comprising:  
2            a processor coupled to a system bus;  
3            a memory coupled to the processor through the system bus;  
4            a machine-accessible medium coupled to the processor through the system bus;  
5            a virus scanning process executed from the machine-accessible medium by the processor,  
6       wherein the virus scanning process causes the processor to check a virus scanning request to  
7       determine if scanning an object of the request is necessary, and if so to further place the checked  
8       virus scan request on a queue in a priority order based on a characteristic of the virus scan  
9       request.

1       56. The computer system of claim 55, wherein the virus scanning process further causes the  
2       processor to select a one of the virus scan requests from the queue.

1       57. The computer system of claim 56, wherein the selection is based on the priority order.

1       58. The computer system of claim 56, wherein the selection is based on the characteristic of  
2       the virus scan request.

1 59. The computer system of claim 56, wherein the virus scanning process further causes the  
2 processor to scan the object of the selected virus scan request.

1        60. The computer system of claim 55, wherein the characteristic includes at least one of an  
2        identity of the user triggering the virus scan request, a type of the process accessing the object of  
3        the virus scan request, a file extension of the object of the virus scan request, a time stamp of  
4        when the virus scan request was received, and an indication of whether the object is being  
5        accessed from a server console or from a network client.